What is claimed is:

1. A method of importing a biologically active molecule into a cell *ex vivo* comprising administering to the cell a complex comprising the molecule linked to an importation competent signal peptide, thereby importing the molecule into the cell.

2. The method of Claim 1, wherein the administration is performed at about 18°C to about 42°C.

3. The method of Claim 1, wherein the molecule is selected from the group consisting of a peptide, polypeptide, and protein.

4. The method of Claim 1, wherein the molecule is selected from the group consisting of a nucleic acid, carbohydrate, lipid, glycolipid and therapeutic agent.

5. The method of Claim 1, wherein the signal peptide comprises the amino acid sequence set forth in SEQ ID NO:5.

6. A method of importing a biologically active molecule into a cell in a subject comprising administering to the subject a complex comprising the molecule linked to an importation competent signal peptide, thereby importing the molecule into the cell of the subject.

7. The method of Claim 6, wherein the molecule is selected from the group consisting of a peptide, polypeptide, and protein.

8. The method of Claim 6, wherein the molecule is selected from the group consisting of a nucleic acid, carbohydrate, lipid, glycolipid and therapeutic agent.

9. The method of Claim 6, wherein the signal peptide comprises the amino acid sequence set forth in SEQ ID NO:5.

10. The method of Claim 6, wherein the molecule is an antigenic peptide.

11. A method of importing a biologically active molecule into the nucleus of a cell in a subject comprising administering to the subject a complex comprising the molecule linked to an importation competent signal peptide and a nuclear localization peptide, thereby importing the molecule into the nucleus of the cell of the subject.

12. The method of Claim 11, wherein the signal peptide comprises the amino acid sequence set forth in SEQ ID NO:5.

13. The method of Claim 11, wherein the nuclear localization peptide comprises the amino acid sequence set forth in SEQ ID NO:2.

14. The method of Claim 11, wherein the nuclear localization peptide comprises the amino acid sequence set forth in SEQ ID NO:10.

15. The method of Claim 11, wherein the nuclear localization peptide comprises the amino acid sequence set forth in SEQ ID NO:11.

16. A method of regulating the growth of a cell in a subject comprising administering to the subject a complex comprising a growth regulatory peptide linked to an importation competent signal peptide, thereby regulating the growth of the cell in the subject.

17. The method of Claim 16, wherein the cell is a tumor cell.

18. The method of Claim 16, wherein the growth regulatory peptide stimulates the cell growth and comprises the nuclear localization sequence of acidic fibroblast growth factor.

19. The method of Claim 18, wherein the growth regulatory peptide comprises the amino acid sequence set forth in SEQ ID NO:3.

20. The method of Claim 18, wherein the growth regulatory peptide comprises the amino acid sequence set forth in SEQ ID NO:4.

21. The method of Claim 16, wherein the growth regulatory peptide inhibits the cell growth.

22. The method of Claim 21, wherein the growth regulatory peptide comprises the amino acid sequence set forth in SEQ ID NO:9.

23. A method of inhibiting expression in a cell in a subject of a gene controlled by transcription factor NF-κB comprising administering to the subject a complex comprising an importation competent signal peptide linked to a nuclear localization peptide of an active subunit of NF-κB complex.

24. The method of Claim 23, wherein the subunit of NF-κB is subunit p50.

25. The method of Claim 24, wherein the complex comprises the amino acid sequence set forth in SEQ ID NO:9.

26. A method of stimulating the immune system of a subject comprising administering to the subject a complex comprising an importation competent signal peptide linked to an antigenic peptide.

27. A complex comprising a biologically active molecule linked to an importation competent signal peptide and to a nuclear localization peptide.

28. The complex of Claim 27, wherein the signal peptide comprises the amino acid sequence set forth in SEQ ID NO 5.

29. The complex of Claim 27, wherein the nuclear localization peptide comprises the amino acid sequence set forth in SEQ ID NO 2.

30. The complex of Claim 27, wherein the nuclear localization peptide comprises the amino acid sequence set forth in SEQ ID NO 10.

31. The complex of Claim 27, wherein the nuclear localization peptide comprises the amino acid sequence set forth in SEQ ID NO 11.

32. A complex comprising an importation competent signal peptide linked to a biologically active molecule selected from the group consisting of a nucleic acid, a carbohydrate, a lipid, a glycolipid and a therapeutic agent.

33. A method of screening signal peptides for the ability to effect the importation of a biologically active molecule into a cell comprising administering to the cell a complex comprising the molecule linked to the signal peptide and determining whether the molecule is imported into the cell, the presence of importation of the molecule indicating a signal peptide which can effect importation.